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# Taxonomic notes on Colombian *Cryptocellus* (Arachnida, Ricinulei)

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**Abstract.** A new species, *Cryptocellus florezi*, is described from a cave in Caquetá Department, Colombia, and may be most closely related to the Venezuelan species *C. lisbethae* González-Sponga 1998. The first known female of *C. peckorum* Platnick & Shadab 1977 is described, and new records of *C. nariño* Platnick & Paz 1979 extend the known distribution of that species into Boyacá and Tolima Departments.

**Keywords:** Ricinuleids, systematics, Colombia

Arachnids of the order Ricinulei can be locally abundant, inside caves and in epigean habitats such as Amazonian forests, where densities as high as 36 individuals per square meter have been reported (Adis et al. 1989). Nevertheless, most of the described species are known from very few specimens, typically from only a single locality. All Recent ricinuleids are assigned to one family, Ricinoididae Ewing 1929, including three genera: *Ricinoides* Ewing 1929 from western and central Africa; *Pseudocellus* Platnick 1980 from Texas, Mexico, Central America, and Cuba; and *Cryptocellus* Westwood 1874 from Central America, South America, and Tobago. Some 30 species of *Cryptocellus* are currently recognized, including 28 cataloged by Harvey (2003) plus *C. abaporu* Bonaldo & Pinto-da-Rocha 2003 and *C. tarsilae* Pinto-da-Rocha & Bonaldo 2007, both from Brazil. Two of those putative species are not identifiable at present; however, *C. euarginatus* Ewing 1929 from Costa Rica and *C. leleupi* Cooreman 1977 from Ecuador were each based on juveniles and were therefore considered *nomina dubia* by Platnick & Shadab (1981) and Platnick & Paz (1979), respectively.

We report here on some recently collected ricinuleid specimens from Colombia. Only four currently valid ricinuleid species are known from that country: *C. magnus* Ewing 1929 from Magdalena Department, *C. glenoides* Cooke & Shadab 1973 from Valle del Cauca Department, *C. peckorum* Platnick & Shadab 1977 from Amazonas Department, and *C. nariño* Platnick & Paz 1979 from Antioquia Department. Of these, *C. peckorum* has been known only from males, but both sexes are known for the other three species.

The new collections reported below provide significant range extensions for *C. nariño*, the first known females of *C. peckorum*, and an interesting new species from Caquetá Department. All measurements are in mm. The specimens examined in this study are lodged in the Instituto de Ciencias Naturales, Universidad Nacional de Colombia (ICN) and the American Museum of Natural History, New York (AMNH).

## Family Ricinoididae Ewing 1929
## Genus *Cryptocellus* Westwood 1874

*Cryptocellus* Westwood 1874:201.
*Heteroricinoides* Dumitresco & Juvara-Balş 1977:148.

**Type species.**—*Cryptocellus: Cryptocellus foedus* Westwood 1874, by monotypy.

*Heteroricinoides: Heteroricinoides bordoni* Dumitresco & Juvara-Balş 1977, by original designation.

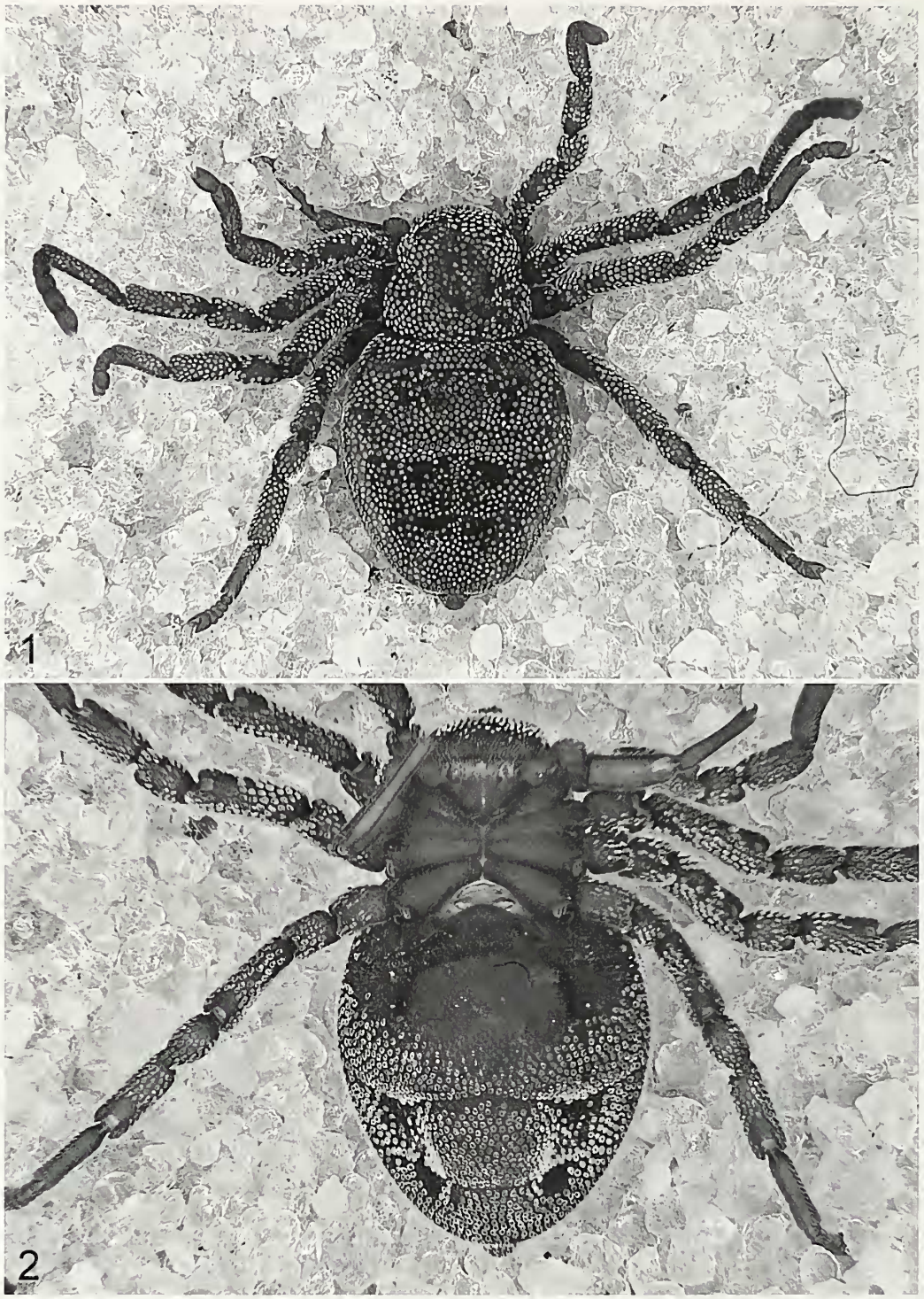
### *Cryptocellus florezi* new species
(Figs. 1, 2, 5–9)

**Material examined.**—COLOMBIA: *Departamento del Caquetá*: Male holotype and female allotype, taken in association with bat guano in the dark zone, 3 m from the entrance of the sandy, highly humid Cueva "El Indio", elev. 1400 m, 2°44′41″N, 54°23′22″W, 2.7 km from Escuela de la Esperanza, Vereda Cristo Rey-Inspección de Policía Guayabal, Parque Nacional Los Picachos, Municipio San Vicente del Caguán, 2 December 1997, Y. Muñoz S. (ICN Ari-02).

**Etymology.**—The specific name is a patronym in honor of the Colombian arachnologist, Prof. Eduardo Flórez.

**Diagnosis.**—In having a body covered with white, scale-like setae (Figs. 1, 2), members of this species resemble those of the Colombian *C. nariño*, but can easily be distinguished by the lack of deep pits on the cucullus and carapace, the absence of elevated tubercles on the distal half of the palpal tibia, and the unexpanded male metatarsus III. Outside of Colombia, similar white, scale-like setae occur in *C. albosquamatus* Cooke (1967) from Guyana (males of which are unknown, but females differ in having triangular spermathecae, see Platnick & Shadab 1977, fig. 52), *C. adisi* Platnick 1988 from Brazil (males of which have a longer, concave metatarsal process, and females of which have more rotund spermathecae, see Platnick 1988, figs. 1, 5), and *C. lisbethae* González-Sponga 1998 from Venezuela (males of which have a distally concave metatarsal process, see González-Sponga 1998, figs. 9, 11; females are unknown).

**Description.**—*Female:* Total length 4.37. Carapace 1.43 long, 1.65 wide near front of coxae III, where widest, reddish orange, darkest posterolaterally, without deep pits; pale ocellar areas obsolete, covered (like most of surface) with white, calyx-shaped, scale-like setae; tiny tubercles (about one-fifth size of scale-like setae) scattered over most of surface; with three depressions: one along midline, one on each side occupying middle one-third of length. Cucullus 0.70 long, 0.95 wide, reddish orange, proximal four-fifths covered with white, calyx-shaped, scale-like setae, distal one fifth with scattered long, white setae and few, subdistal tubercles; lateral lobes only slightly protuberant. Left chelicera: movable finger flattened posteriorly, not widened transversely, armed with nine teeth, fourth and fifth most proximal smaller than others; fixed finger armed with six teeth, most distal one much larger than others. Sternal region with coxae I not meeting tritosternum; coxae II meeting along their posterior halves, their suture line less than half as long as that of coxae III; coxae IV meeting anteriorly. Abdomen 3.04 long, 2.52 wide near rear of tergite 11, where widest, coloration and setation as in carapace except for narrow, dark orange articular membranes; ventral surface with white, calyx-shaped, scale-like setae covering posterior two-thirds of surface, densely packed except on deep, paramedian depressions on sternites 12 and 13; all surfaces with scattered, tiny tubercles; median plates of tergites wider than long, with submarginal depressions occupying middle half of length of




Figures 1, 2.—*Cryptocellus florezi* new species, female holotype: 1. Dorsal view; 2. Ventral view.

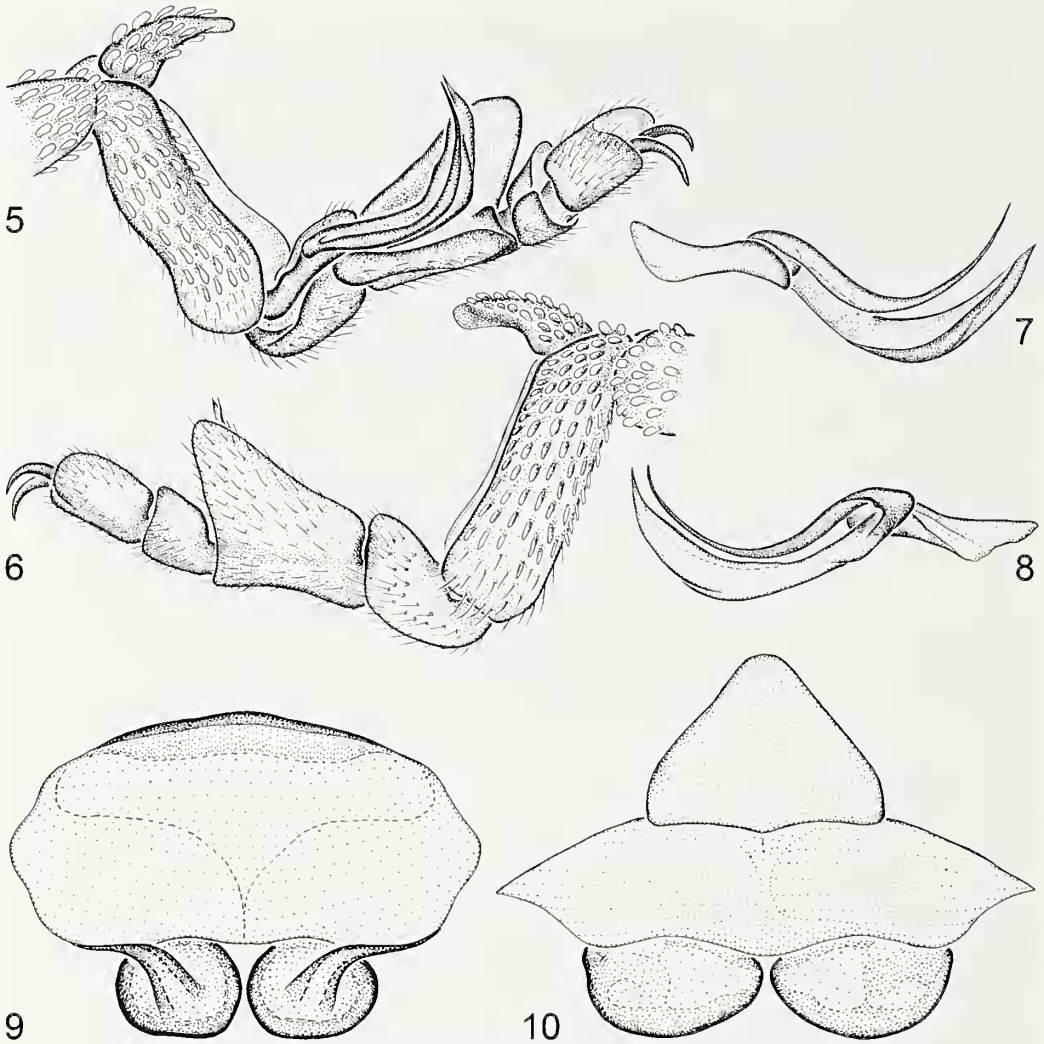
tergite 11, anterior two-thirds of length of tergite 12, anterior half of length of tergite 13, depressions with fewer scale-like setae than remainder of surface. Pygidium without notch in posterior dorsal or ventral margin of basal segment. Palpal coxae and trochanters reddish orange, more distal segments orange; second trochanters and femora with white, navicular setae, trochanters and femora with small tubercles, densest on posterior surfaces; coxae with long, white setae, without thickened white setae posteriorly; tibiae with short, stiff setae but without tubercles. Leg formula 2341. Legs reddish orange, tarsi lightest, all segments except coxae and tarsi with white, calyx-shaped, scale-like setae, densest laterally on femora and tibiae, with few, tiny tubercles, without enlargements. Second legs not widened, femur I about three times, femur II about five times as long as wide. Tarsal claws thin, evenly curved. Posterior surface of spermathecae with ventrally situated duct (Fig. 9).

*Male:* As in female, except for the following. Total length 3.74. Carapace 1.32 long, 1.47 wide, with pale ocellar areas present but diffuse, those areas without scale-like setae. Cucullus 0.70 long, 0.94 wide. Left chelicera: movable finger with eight teeth, third most proximal smaller than others, fixed finger with five teeth. Suture line


Figures 3, 4.—*Cryptocellus peckorum* Platnick & Shadab, female: 3. Dorsal view; 4. Ventral view.

of coxae II as long as that of coxae III. Abdomen 2.44 long, 2.38 wide, depressions on sternites 12 and 13 much shallower than those on female. Leg III: metatarsus not expanded, metatarsal process short, convex (Figs. 5, 6); tarsal process boat-shaped, accessory piece filiform (Figs. 7, 8).

**Relationships.**—We suspect that this species is most closely related to *C. lisbethae*, rather than to *C. narino*, *C. adisi*, or *C. albosquamatus*, as the white, scale-like setae are typically calyx-shaped, arising from a stalk near the center of the scale, rather than canoe-shaped, arising from a stalk near one end of the scale. Similar scales were reported by Judson & Hardy (2001) on a protonymph from Tobago, and from only near the posterior margin of the carapace in *C. adisi* by Adis et al. (1999), who indicated that the scale-like setae help the animals survive inundations by using plastron respiration. The other white-




Figures 5–10.—*Cryptocellus* species. 5–9. *C. florezi* new species, holotype male, allotype female: 5. Male leg III, anterior view; 6. Male leg III, posterior view; 7. Male copulatory apparatus, anterior view; 8. Male copulatory apparatus, posterior view; 9. Female genital lip and spermathecae, posterior view. 10. *C. peckorum* Platnick & Shadab, female genital lip and spermathecae, posterior view.

scaled Colombian species, *C. narino*, belongs instead to the *C. magnus* group of species from northwestern South America (Platnick & Paz 1979).

**Distribution.**—Known only from the type locality.

*Cryptocellus peckorum* Platnick & Shadab
(Figs. 3, 4, 10)

*Cryptocellus peckorum* Platnick & Shadab 1977:13, figs. 54–57.

**Material examined.**—COLOMBIA: *Amazonas:* 1♀, Leticia, 7 km via Tarapacá, elev. 220 m, 30 October 2002, G. Amat and students from the Universidad Nacional (ICN Ari-07).

**Diagnosis.**—Females of this species, described here for the first time, differ from those of *C. florezi* and *C. narino* by lacking white, scale-like setae, from those of *C. narino* and *C. magnus* by lacking deep cuticular pits on the carapace, cucullus, and abdomen, and from those of *C. glenoides* by having shorter, wider spermathecae and a narrower genital lip (Fig. 10).

**Description.**—*Male:* Described by Platnick & Shadab (1977).

*Female:* Total length 4.36. Carapace 1.61 long, 1.69 wide near front of coxae III, where widest, reddish orange, darkest posteriorly, without deep pits (Figs. 3, 4); pale ocellar areas obvious, about half as long as coxae II; surface without scale-like setae but with numerous tubercles densely covering most of surface; with only slight depressions: one along midline, one on each side running from midline to rear of coxae II. Cucullus 1.03 long, 1.39 wide, reddish orange, without scale-like setae, surface almost entirely coated with tiny tubercles; lateral lobes only slightly protuberant, anterior margin densely set with long white setae. Left chelicera: movable finger flattened posteriorly, widened transversely, armed with 11 teeth, two most distal much enlarged, fused together for most of their length, fifth, seventh, and eleventh most distal much smaller than others; fixed finger armed with five teeth, most distal one much larger than others. Sternal region with coxae I not meeting tritosternum; coxae II meeting along their posterior three-quarters, their suture line as long as that of coxae III; coxae IV meeting anteriorly. Abdomen 2.95 long, 2.33 wide near middle of tergite II, where widest, coloration and setation as in carapace except for narrow, dark orange articular membranes; dorsal and ventral surfaces without scale-like setae, densely coated with tiny tubercles; median plates of tergites wider than long, with slight submarginal depressions, tergite II greatly elevated anteromedially. Pygidium without notch in posterior dorsal or ventral margin of basal segment. Palpal coxae and trochanters dark orange, more distal segments orange; coxae with few median and posterior tubercles, trochanters with few posterior tubercles; coxae with long, white setae anteriorly, without thickened white setae posteriorly; tibiae with short, stiff setae but without tubercles. Leg formula 2341. Legs reddish orange, tarsi lightest; without scale-like

setae, tiny tubercles scattered on all but ventral surfaces; without enlargements. Second legs slightly widened, femur I about three times, femur II about four times as long as wide. Tarsal claws thin, evenly curved. Spermathecae about twice as wide as long, almost meeting at midline (Fig. 10).

**Distribution.**—Known only from the area of Leticia in Amazonas, Colombia.

*Cryptocellus narino* Platnick & Paz

*Cryptocellus narino* Platnick & Paz 1979:4, figs. 3–11.

**Material examined.**—COLOMBIA: *Antioquia*: holotype male, Nariño, Antioquia, Colombia, 23 September 1975, N. Paz (AMNH).

*Other material examined:* COLOMBIA: *Boyacá:* 1♀, Puerto Boyacá, Inspección Puerto Romero, elev. 650 m, 24 April 2001, R. Diaz, G. Amat (ICN Ari-05). *Tolima:* 1♂, 1♀, Ibagué, Barrio Piedra Pintada, elev. 1200 m, 26 December 1999, L. F. García (AMNH), 1♂, 2♀, same (ICN Ari-04), 1♂, 1♀, same locality, under rocks, 2 August 1999, L. F. García (ICN Ari-03),

**Distribution.**—This species is now known from three departments (Antioquia, Boyacá, and Tolima) in central Colombia.

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